of the river bed indicate an average of about one foot added overall to the elevation of the bed at the river's mouth in each twenty-year period, or about one mile added to the coastline in each sixty-year period.[1]

On this basis, the site of Shanghai would have been on the seacoast about 500 B.C., an empirical estimate which agrees with the record of Chinese history. All cities in the delta area east of the line of Sungchiang (map 5) for which there are adeqaute records were founded after the third century A.D.[2] Records of the Eastern Han dynasty (25 A.D. to 220 A.D.) speak of Kunshan, now 80 miles from the sea, as the seaport of Soochow in the second century A.D., but Shanghai has served as Soochow's port since about the fifth century A.D. Tsungming Island in the Yangtze estuary, according to the official gazetteer of the island, first emerged as a habitable sand spit in the tenth century A.D. By the thirteenth century it was sufficiently densely populated to be made a separate *hsien* (county), and at present measures approximately 43 by 8 miles.[3]

Building and Drainage

The material on which Shanghai rests is thus totally unconsolidated and presents serious problems for building. An average vertical section shows silt from the surface to about 20 feet, sand to 300 feet, and gravel mixed with sand and silt to about 1000 feet, where some consolidated conglomerate is reached. The water table lies between five and eight feet below the surface of the ground.[4] It may be assumed that before the draining and filling done by the foreigners since 1843, the water table was considerably higher, and that even before 1843 the canals dug by the Chinese provided enough drainage to keep the water table lower than it would otherwise have been considering the soil and elevation of the site.

Foreigners were discouraged to find in 1875 when a bridge was built across the mouth of Soochow Creek * that one blow from the small pile driver employed buried the pilings out of sight in the

* "Soochow Creek" is the name given by foreign residents to the Woosung Chiang, originally a much larger stream, which drains into the Whangpoo at Shanghai and connects the city with Soochow, some sixty miles inland. In the interests of clarity and consistency it will hereinafter be referred to as Soochow Creek, the name by which it has most generally been known in Shanghai itself.

2: Murphy G-4 (no date) 1953 AF15 East China AF15

silt.[5] A foreign resident writing in 1915 took a gloomy view of the city's future because he considered that six storeys was the maximum possible for buildings on this site.[6] These problems have been overcome, at considerable expense, by floating the taller buildings on concrete rafts in order to provide a stable foundation adequate to support structures which would otherwise sink into the alluvium. Until the first experiment with this method in the building of the new Shanghai Club in 1910, large buildings had been set on wooden pilings driven into the silt, and great care was necessary to prevent unequal settling. Shanghai's twenty-storey hotels and public buildings, erected during the 1920's and 1930's, float on their concrete rafts in this jelly-like subsoil, a scant 800 miles from the major earthquake belt running through the Japanese islands, but fortunately in the hundred-year history of the foreign settlements, no serious shocks have occurred.

Surface drainage has also been a constant problem in the development of modern Shanghai. The original site[7] (adjoining the walled Chinese city — map 6) as the British found it in 1842 was a typical agricultural landscape of the Yangtze delta: wet rice paddies and dry cotton fields, crisscrossed by creeks and canals, and with occasional clusters of family villages. This land was subject to frequent floods at high tides by the tidal inflow of water from the Yangtze and the resultant backing up of fresh-water outlets (primarily Soochow Creek and the Whangpoo), and until recently it was still flooded nearly every year in late summer by typhoon winds from the east and accompanying heavy rains. The land within the metropolitan area was gradually raised by filling to permit the building of roads and houses. Filling was easier and cheaper than artificial drainage for all but the swampiest areas and proved adequate for the growth of the city, but it was accomplished only at a considerable expense of money and energy.

The commercial core of the city, concentrated along the Whangpoo frontage, remained regularly subject to flooding. One of the first public works projects to be carried out under the Communist administration (which has attempted to make Shanghai a showplace of efficiency as an advertisement of the virtues of the new regime) was the filling of the lowest places in this downtown area, particu-

2: Murphy G-4 (no date) 1953 AF15 East China AF15

Settlement and Trade

341 347 The foreign population of the city, swollen to 100 in 1843 by the presence of British troops, fell to 50 in 1844, but by 1849 had risen to 175 traders, missionaries, and consular staff, who built the first Settlement roads, following the small winding creeks. The first foreign buildings were mainly godowns (warehouses) and residences combined in one large establishment within two-or-three-acre compounds along the landward side of the Whangpoo Bund. No foreign architects were available, and the plans were drawn by the merchants and modified by Chinese builders to fit local materials and Chinese techniques, so that the resulting structures were of the simplest design.

On the river side of these compounds was a perfectly square bungalow-type building which contained bedrooms, mess hall, and offices. In order to shut out the summer sun and keep the inside as cool as possible, the stamped earth or native sun-dried brick walls were at least three feet thick and plastered or stuccoed in white on the outside, while an open verandah with wide arches ran around the outside of the first two stories. Overhanging roofs shielded the two or three upper stories. In the rear of the compound were usually four or five godowns (for the different trade goods), dwellings for the Chinese assistants, the residence and office of the compradore* (the chief Chinese assistant or agent), and the

441 *The compradore was a treaty port institution which epitomized the hybrid economy and business order produced where China and the West met. It originated with the Portuguese in the East Indies in the sixteenth century, who supplied the term. In the China treaty ports, the compradore was usually a banker or merchant who was acquainted not only with the China market and with indigenous business methods and conditions, but had also learned enough from and about the foreigners to be an invaluable aid. He usually had his own Chinese staff, and guaranteed their honesty by his personal and verbal bond, in the Chinese tradition, but in keeping with Western usage also deposited a cash security with his employing firm. He was paid a fixed salary, plus a commission, and was seldom in want of funds. More than once a foreign firm was saved from bankruptcy by the generosity of its compradore. Such men were highly respected by the foreign community as shrewd and scrupulously honest business men, and as friends. Their standing in the Chinese community depended on the prevailing attitude toward the foreigners (see pp. 25–7 above). As a group they were quick and apt students of Western civilization in all of its practical aspects, and from their number was recruited a majority of modern China's political and economic leaders (among them, T. V. Soong and H. H. K'ung) until the final success of the Communist revolution. By about 1930 most

2: Murphy G-4 (no date) 1953 AF15 East China AF15

stables.[20] Within a few years bricks began to arrive in ballast from England, and the brick work prominently displayed in verandah arches facing the Bund provided an indication of the search for Chinese markets for foreign goods in return for China's wealth of tea and silk. This architectural style, common to all the nineteenth-century treaty ports in central and south China, was wittily and fittingly christened the "Compradoric," for it was a necessary blend of Chinese with foreign methods.

The larger foreign firms had two or three partners and eight or ten foreign clerks, plus fifty or sixty Chinese staff (with families), all living in the compound. Among the foreigners there was a notable preponderance of Scots, including the partners of Jardine, Matheson, Ltd., the largest trading firm in Shanghai and known universally as "the muckle house." Apparently the enterprise of these perennial pioneers had conquered Shanghai as it had conquered London. William Jardine, the firm's founder, had been a surgeon on one of the East India Company's ships trading to Canton. He found trading more profitable than healing, and in 1828 persuaded his compatriot James Matheson to join him in his new company at Canton. A Jardine ship carried the first cargo of "free" tea from Canton after the old Company's monopoly was removed by Act of Parliament in 1834. William Jardine was said to keep only one chair (his own) in his office, to encourage his clients to state their business and leave.*

All the large foreign trading firms were divided into six departments: 1. tea; 2. silk; 3. "Manchester goods" (predominantly cotton piece goods); 4. shipping and insurance (understandably a profitable enterprise); 5. land and house agency; 6. "muck and truck" (all the other trade goods, which seldom amounted together to more than 5 per cent of any firm's total goods transactions).† Each

foreign firms in Shanghai found compradores no longer necessary as employed agents. By that time the compradores had taught them almost as much as they had unwittingly taught the compradores.

* See Greenberg, British Trade, for a detailed account of the history and operations of this and other private firms in the Canton trade, based on contemporary letters and business records.

† Until 1890, overseas exports in this category were primarily hides, leather, bristles, horsehair, China grass, and art objects; imports, aside from opium and textiles, were largely limited to hardware, cotton yarn (for Chinese household and small-scale industry), and machinery.